

hair-like tips characteristic of those of the Emu and Cassowary, and still less whether the apical portion of the feather supported simple barbs such as occupy that position in those birds. The only fact of importance, indeed, that I can hope to make known by this paper is that the *Dinornithes* undoubtedly possessed a large accessory plume, thus adding another proof of their relationship to the green-egged Emus and Cassowaries existing in the Australian region, and of their difference from the white-egged group of *Struthiones* represented in Africa and South America.—*Proc. Zool. Soc.* March 14, 1865.

*On the Metamorphoses undergone by certain Fishes before acquiring the Adult Form.* By PROFESSOR AGASSIZ.

I have lately observed in Fishes metamorphoses as considerable as those known to take place in the Amphibia. Now that pisciculture is followed with so much success and on so large a scale, it is surprising that this fact has not been long since observed; but this may perhaps be attributed to the circumstance that these metamorphoses usually commence after the hatching of the young, at a period when they die rapidly, if kept in captivity. At this age, moreover, they are for the most part too small to be conveniently studied in their natural element. Nevertheless this is the most important period of their growth, if we wish to study their natural affinities. I intend shortly to show how certain small Fishes, at first resembling Gadoids or Blennioids, pass gradually to the type of the Labroids and Lophioids. I shall also be able to show how certain embryos resembling the tadpoles of the Frog or Toad, gradually acquire the form of Cyprinodonts,—how certain Apodal Fishes become transformed into Jugular and Abdominal Fishes, and certain Malacopterygians into Acanthopterygians, and, lastly, how we may found a natural classification of Fishes upon the correspondence existing between their embryonic development and the complication of their structure in the adult state.

Quite recently I have discovered that the metamorphoses of certain members of the Scomberoid family are perhaps still more unexpected than any of those which I have previously observed. Every ichthyologist knows the characters of the Dory (*Zeus faber*), and the peculiarities which connect this fish with the family of the Scomberoids. Another less-known but very curious fish, *Argyropelecus hemigymnus* (Cocco), which likewise inhabits the Mediterranean, has been generally referred to the Salmon family, or placed with the Salmon as a subfamily. Systematic authors have generally regarded the Scomberoids and the Salmon as very different fishes, the former being referred to the Acanthopterygii and the latter to the Malacopterygii. Nevertheless *Argyropelecus hemigymnus* is neither more nor less than the young state of *Zeus faber*.

I expect that all ichthyologists will reject this assertion as erroneous. Nevertheless nothing can be more true; and therefore, instead of seeking to prove it by long arguments, I shall, for the present, merely request my *confrères* to procure small specimens of the Dory (of 8 to 10 centimètres in length), and to compare them with authentic specimens of *Argyropelecus*, feeling certain that they will admit the

identity of the two fishes as soon as they have made the comparison.—*Comptes Rendus*, January 23, 1865, p. 152.

*Description of the Egg of Parra gallinacea.*

By JOHN GOULD, F.R.S. &c.

The ground-colour of the egg of this species is of a dark shining raw-sienna tint, over which are traced in various directions a series of broad and fine hair-like contorted lines of brownish black, which, by occasionally uniting laterally and crossing each other, form here and there large blotches. Although these markings are of the same character on each egg, they are somewhat differently distributed: thus, on one of the two I possess, they are more numerous at the larger end, and absent at the smaller; while on the other they are more abundant at the smaller, and less so at the larger extremity. The eggs are one inch and an eighth in length by seven eighths of an inch in breadth. They are, moreover, rendered remarkably conspicuous by the singularly pointed form of the smaller end, and by their small size as compared with that of the bird, but above all by the form and disposition of the markings, which are as if traced by the hand of a person who had amused himself by attempting to cover the surface with fantastic streaks, blotches, and contorted curves from end to end.—*Proc. Zool. Soc.* Dec. 13, 1864.

*On a new Form of Brachiolaria.* By M. SARS.

M. Sars has discovered a new Echinodermatous larva belonging to the Brachiolarian type. It presents a greater affinity to the *Bipinnariæ* than those observed by Johannes Müller. Its development is also very similar to that of the *Bipinnariæ*,—the Starfish in course of formation presenting the same relations of position and union with the body of the larva. There are, however, some differences. In the *Bipinnariæ* the rudiment of the ambulacral system makes its appearance very early, in the form of a rosette of five cæca; in the *Brachiolaria*, on the contrary, these cæca are not brought together in a group, but distant from each other, and their circle is open on one side. This condition persists until after the formation of the perisoma, with its five arms and their spines.

The *Brachiolaria* are really distinguished from the *Bipinnariæ* only by the presence of their contractile arms at the anterior extremity. M. Sars has ascertained that these organs, whose function has hitherto been doubtful, act as an apparatus of attachment. They may be compared with the very similar organs of attachment of the larvæ of *Echinaster sanguinolentus* and *Asteracanthion Mülleri*. Thus these various types of larvæ, so different in appearance, are united in an unexpected manner.—*Videnskabselskabets Forhandlingar*, 1863; *Abstract in Bibl. Univ.*, May 1865, *Bull. Sci.*, p. 62.

*Investigation of the Structure of the Encephalon of Fishes, and of the Homological Signification of its different Parts.* By M. HOLLARD.

The type of the encephalon in Fishes is inferior to that prevailing in Mammalia, not only in its general development, but also in the absence of several organs. This type is not only inferior, but it is